advances in computing

To examine the current state of the art in the computing sciences, describe experimental and frontier projects, and attempt to define future advances.

9:00 A.M.

REGISTRATION AND COFFEE

9:30 A.M.

WELCOME

SOL BRODER
Chairman, Long Island Chapter of ACM

KARL D. HARTZELL
Administrative Officer, SUNY at Stony Brook

9:45 A.M.

SOFTWARE AND HARDWARE

Chairman: JOHN W. CARR III
University of Pennsylvania

Software Systems

BERNARD GALLER, University of Michigan

From FORTRAN to NPL, rapid developments in languages and processors have attempted to ease the difficulty of communication between man and machine. The newest advancement, time sharing, will motivate many further changes in the communication problem. Hence, this session will emphasize software systems necessary to support the time shared facility.

Dr. Galler is Associate Professor of Mathematics, a member of the recently formed Communication Sciences Department, and a Research Associate of the Computing Center at the University of Michigan. He has long been active in language and compiler development.

Hardware Systems

WOLFGANG POPPELBAUM, University of Illinois

The numerous hardware advancements of recent years promise to continue unabated for many years to come. Discussion will center on current significant developments in new hardware for memories, symbiosis of memory and central processor, ultimate internal speed limits, analog sub-systems, electro-optical interface and optical pre-processing.

Dr. Poppelbaum is Professor of Electrical Engineering and Principal Investigator in the Circuit Research Group of the Computer Laboratory, University of Illinois. His group developed the circuits for the new Illinois computer, among the fastest systems in the world.

Integrated Storage and Decision Systems

JOHN W. CARR III, University of Pennsylvania

A philosophy, that re-evaluates man-machine systems for problem solution and one that will avoid many present difficulties of computer usage, will be proposed. Requirements for equipment, data and associated algorithms will be discussed. To insure the success of this evolutionary approach, the relationship between user, designer and builder must change markedly.

Dr. Carr is Associate Professor of Engineering and Mathematics at the Moore School of Electrical Engineering, University of Pennsylvania. Nationally recognized for pioneering work in the computing field, he is also prominent as an educator and mathematician.

11:45 A.M.

LUNCHEON AND ADDRESS

The Way It Was B.C. (Before Computers)

WALTER RAMSHAW, United Aircraft Corporation

An evaluation of past "advances in computing" may well serve as a basis for anticipating those of the future. The discussion of methods B.C. — in particular, the speaker's card walloping experience while preparing his master's thesis — will recall to the conference the tremendous advances which have been achieved since the dawn of the computing era.

Mr. Ramshaw, Director of Computer Research for the United Aircraft Corporation, until recently was in charge of the Research Laboratories computing activities. The program he currently directs deals with effective utilization of computers in the creation of designs and their associated analyses.

1:30 P.M.

MAN MACHINE SYSTEMS

Chairman: THOMAS IRVINE
Dean of the Engineering College, SUNY at Stony Brook

Artificial Intelligence and Machine Learning

ARTHUR SAMUEL, International Business Machines Corporation

The recent over-popularization of the topics under discussion makes it imperative to distinguish fact from fancy. The discussion will concentrate on principles of machine learning as they have been applied and verified by experiments in which a computer was "taught" to play a game of checkers so well that it defeated its programmer-teacher after a remarkably short learning period.

Dr. Samuel, Research Consultant at the IBM Watson Research Center and a visiting Professor at MIT, is editor of the IBM Journal on Research and Development. Long recognized for his work on electron tubes, his principal research since 1949 has involved design, construction and use of digital computers.

Input and Output of Graphics

BERTRAM HERZOG, Ford Motor Company

Many graphical devices are available for man-machine communications. Input include graphical digitizers and electronic scanners; output include cathode ray tubes, analog plotters and numerically driven drafting machines. Discussion will illustrate the scope of such devices, describe user applications, and offer opinions on the importance of graphics.

Dr. Herzog is Manager of Engineering Methods on the Engineering and Research Staff of Ford Motor Company. His responsibilities include developing methods for graphic communication devices, time-shared computer systems, and problem-oriented languages.

Time Shared Computer Systems

JOSEPH WEIZENBAUM, Massachusetts Institute of Technology

A most exciting recent development is the "simultaneous" access to a computer by many users, each at a remote console. Discussion will examine the time sharing concept, specifying how it may revolutionize the man-machine relationship and lead to establishing a computing utility capable of supplying "computer power" to each customer.

Mr. Weizenbaum, an Associate Professor at the Massachusetts Institute of Technology, has been deeply involved in the MIT time sharing project since 1963. His current research involves language development for conversational communication with computers.

3:45 P.M.

THE MAC SYSTEM DEMONSTRATION

The Massachusetts Institute of Technology Project MAC (Machine Aided Cognition, Multiple Access Computer) facility is the most sophisticated time sharing system now operational. Emphasis is on ease of access, so that man and computer may engage in an effective real-time dialogue. Using a console at Stony Brook connected to the MAC facility by telephone lines, Professor Weizenbaum will demonstrate the remarkable capabilities of MAC in numeric and non-numeric information processing. A closed circuit TV system will better enable attendees to view the demonstration.

4:45 P.M.

CLOSING REMARKS

AARON FINERMAN
Director of the Computing Center
Professor of Engineering, SUNY at Stony Brook

4:30 P.M.

COFFEE HOUR

SUNY at Stony Brook is located on Long Island approximately 60 miles from New York City. Since nearby hotel and transportation facilities are limited, attendees may wish to stay directly on campus or in New York City. Limited dormitory facilities are available for the nights of May 20-21 at the rates shown on the registration form. Those preferring to stay in New York City should reserve accommodations as soon as possible since city hotels will bear the brunt of visitors to the IFIP Congress and the World's Fair.

BUS transportation between New York City and Stony Brook will be provided for registrants who check the box on the attached registration form. Please return this form immediately so that sufficient chartered buses may be hired. Short Line Buses will leave for Stony Brook at 7:30 A.M. sharp from Gate 102, N.Y. Port Authority, 41st Street and 8th Avenue. Return buses will leave Stony Brook at 5:45 P.M.

DRIVING INSTRUCTIONS: Eastbound on Long Island Expressway to Exit 53N, Sagtikos State Parkway. Northbound on Parkway, for 2.2 miles to Exit SM2, Veterans Highway. Continue on exit road for .5 miles to traffic light. Eastbound (right) on Highway for 3.7 miles to Smithtown Bypass (left fork). Eastbound on Bypass, which becomes Nesconset Highway, for 7.2 miles to Nicoll Road, immediately past Strathmore model homes. Northbound (left) on Nicoll Road for 2 miles to University on left. Follow signs to Gymnasium Building parking area.

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PLEASE register as soon as possible in order to facilitate conference arrangements.

registration form

ADVANCES IN COMPUTING / MAY 21, 1965

SUNY at Stony Brook

The conference registration fee is $10.00, including luncheon, coffee and bus transportation. Dormitory room rates are $4.50 nightly (double) and $6.00 nightly (single).

Make checks for registration fee and room charges, if any, payable to CONFERENCE ON ADVANCES IN COMPUTING and return with this form to the address indicated on the reverse side.

NAME_____

ORGANIZATION_____

ADDRESS_____

☐ Check for double occupancy dormitory

☐ Check for single occupancy dormitory

☐ Check for bus transportation

Arrival date and time . . . . . .

Departure date and time . . . . . .

Enclosed is check for . . . . . .

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